

WHAT IS CLAIMED IS:

1 1. A method for reducing the servo position error signal non-
2 linearity during self-servo writing, comprising:
3 measuring the write width for all heads; and
4 adjusting a write current for each head in a disk drive toward a
5 predetermined level.

1 2. The method of claim 1 further comprising determining a
2 mean track propagation width for the disk drive, the predetermined level
3 establishing the a mean track propagation.

1 3. The method of claim 1 wherein the measuring further
2 comprises determining a mean head width and the adjusting further comprises
3 adjusting the write current for each head by applying a higher write current to
4 heads smaller than the mean head width and a lower write current to heads
5 wider than the mean head width.

1 4. The method of claim 1 further comprising verifying the
2 optimal performance is achieved using the adjusted write currents.

1 5. The method of claim 4 wherein the verifying further
2 comprises repeating the measuring and adjusting until a track propagation for the
3 disk drive meets a predetermined criteria.

1 6. The method of claim 5 wherein the predetermined criteria
2 comprises a predetermined minimum threshold.

1 7. The method of claim 5 wherein the predetermined criteria
2 comprises a minimum variance in track propagation width.

1 8. A disk drive, comprising:
2 a plurality of data storage media mounted for simultaneous rotation
3 about an axis;
4 an actuator for moving each of a plurality of heads relative to an
5 associated data storage media for reading and writing data to the associated
6 data storage media, and
7 a disk controller for writing a data pattern to respective data storage
8 media utilizing each of the plurality of heads, wherein the disk controller
9 measures the write width for each of the plurality of heads and adjusts a write
10 current for each of the plurality of heads toward a predetermined level.

1 9. The disk drive of claim 8 wherein the disk controller
2 determines a mean track propagation width for the disk drive, the predetermined
3 level establishing a mean track propagation.

1 10. The disk drive of claim 8 wherein the disk controller
2 measures the write width for each of the plurality of heads by determining a
3 mean head width and adjusting the write current for each of the plurality of heads
4 by applying a higher write current to heads smaller than the mean head width
5 and a lower write current to heads wider than the mean head width.

1 11. The disk drive of claim 8 wherein the disk controller further
2 verifies that optimal performance is achieved using the adjusted write currents.

1 12. The disk drive of claim 11 wherein disk controller verifies that
2 optimal performance is achieved by repeating the measuring and adjusting until a
3 track propagation for the disk drive meets a predetermined criteria.

1 13. The disk drive of claim 12 wherein the predetermined criteria
2 comprises a predetermined minimum threshold.

1 14. The disk drive of claim 12 wherein the predetermined criteria
2 comprises a minimum variance in track propagation width.

DRAFT - 6/2020 SJO 919980105US1